

Work Order ID 158340

Monday, March 20, 2017 1:30:41 PM

158340

Page 1

Item ID: D2665-2

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Saddle, RH, Fwd, Aft, Out

Start Date: 3/21/2017 Start Qty: 4.00

4

Cust Item ID:

Required Date: 4/3/2017 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals:

Process Plan:

DAS

21

Date: MAR 20 2017

Tooling:

Date:

Run Start

NR1

QC:

9-89

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D2665

Rev D

100

2.13

100

HAAS 1

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

Memo

3.28

1- Program batch number2- Machine Step # 1 of Folio and visually inspect as per attached Dimension Sheet 3- Machine Step # 2 of Folio and visually inspect as per attached Dimension Sheet 4- Machine Step # 3 of Folio and visually inspect as per attached

4

Ø

DAS

44

9-89

17-03-25

110

0.00

110

Mill Conv

Conventional Milling Machine

CONVENTIONAL MILLING MACHINE

Memo

0.86

Machine Keyway and inspect per attached dimension sheet

4

Ø

DAS

44

9-89

17-03-26

120

0.00

120

QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

Memo

0.04

4

Ø

DAS

44

9-89

17-03-26

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause			FAULT CATEGORY							
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence
Past Expiry Date ☐	☐	Manufacturing Process	OTHER : _____							
Misidentified ☐	☐	Past Due								

Work Order ID 158340

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158340

Page 2

Item ID: D2665-2 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Saddle, RH, Fwd, Aft, Out
Start Date: 3/21/2017 Start Qty: 4.00 ***4*** Cust Item ID:
Required Date: 4/3/2017 Req'd Qty: 4.00 ***4*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.08				4	0		DAS 49 9-89 17/03/27
140 *140* HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 0.76				(x4)	0		2017/03/28 BEB
150 *150* Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum M 136654 Memo START TIME: 9:30 FINISH TIME: 10:00	0.00 0.66				4	0	17-03-29	239

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By 	
								Lead hand / Supervisor Approval Verification 	
QC / QA Coordinator Approval 									

Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER : _____							
Misidentified	☐	Past Due	☐								

Work Order ID 158340

Monday, March 20, 2017 1:30:41 PM

158340

Page 3

Item ID: D2665-2

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Saddle, RH, Fwd, Aft, Out

Start Date: 3/21/2017 Start Qty: 4.00

4

Cust Item ID:

Required Date: 4/3/2017 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

QC3- Inspect Part Finish

0.00

160

QC

Memo

0.04

Quality Control

4

DAS
38
9-89
MAR 29 2017

170

Identify as per dwg & Stock Location: ST402

0.00

170

Packaging

Memo

0.04

Packaging

DAS
6
9-89

4

DAS
41
9-89
MAR 31 2017

180

QC21- Final Inspection - Work Order Release

0.00

180

QC

Memo

0.40

Quality Control

17/4/4

DAS
21
9-89

APR 03 2017

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

Monday, March 20, 2017 1:30:41 PM

Page 1

Work Order ID: 158340

158340

Parent Item: D2665-2

D2665-2

Parent Item Name: Saddle, RH, Fwd, Aft, Out

Start Date: 3/21/2017

Required Date: 4/3/2017

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP: C 00.11.01 Removed P/O for Powder Coat - in house process
EC
IPP Rev:D As per Rev D 07-03-19 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D6101-003

Manufactured

No

100

Each

23.0000

1

4

D6101-003

Saddle Billet, 7075

Location

Loc Qty

Loc Code

MAT040

3

149946

3

MAT046

20

153934

20

3
1

/4

DAS
45
9-89

17-3-23

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step # : _____		QTY Effective : _____			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
3AQ 24 08-0									
							Completed By 		
							Lead hand / Supervisor Approval Verification 		
QC / QA Coordinator Approval 									

Root Cause				FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due	☐ Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter	☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes	☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center	☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence	☐ OTHER : _____	

DART AEROSPACE LTD		Work Order: 158340
Description: 206 Saddle, Outboard, Right side		Part Number: D2665-2
Inspection Dwg: D2665	Rev: D	DSK: Rev: Page 1 of 1

FIRST ARTICLE INSPECTION DIMENSION SHEET

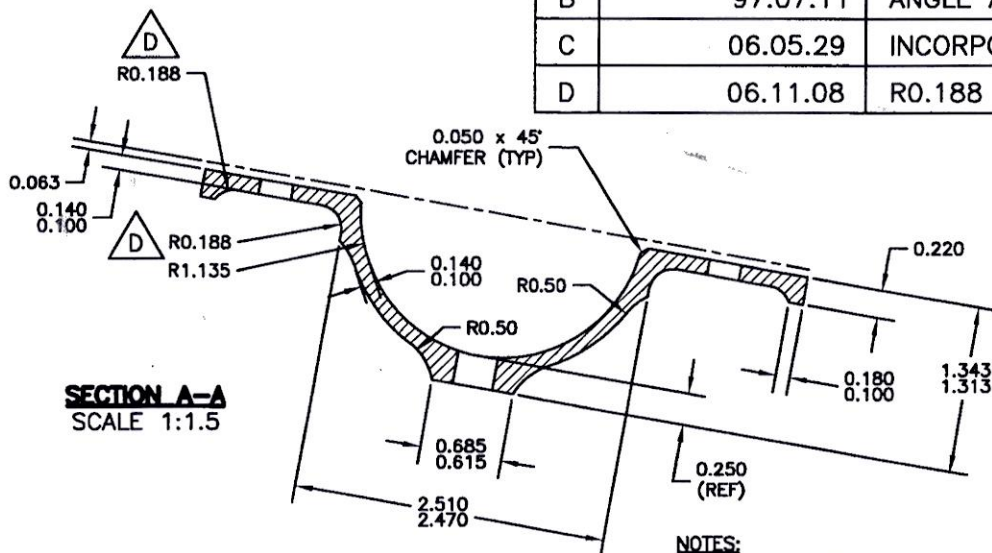
Dim	Min	Max	Go/No Go Gauge	Record Actual Dimensions				
				1	2	3	4	5
A	0.100	0.140		.117	.118	.117	.116	
B	0.100	0.140		.117	.119	.119	.119	
C	1.125	1.145		1.135	1.135	1.135	1.135	
D	0.615	0.685		.680	.680	.680	.680	
E	0.240	0.260		.257	.258	.258	.258	
F	1.313	1.343		1.330	1.331	1.331	1.328	
G	0.210	0.230		.226	.227	.226	.226	
H	0.100	0.180		.135	.135	.135	.135	
I	2.470	2.510		2.495	2.495	2.495	2.495	
J	1.565	1.585		1.575	1.575	1.575	1.575	
K	0.235	0.240		.239	.238	.239	.239	
L	0.100	0.120		.114	.113	.114	.114	
M	0.990	1.010		1.002	1.003	1.003	1.003	
N	0.510	0.515		.510	.510	.510	.510	
O	5.990	6.010		5.998	5.998	6.001	6.001	
P	1.245	1.255		1.250	1.250	1.250	1.250	
Q	2.495	2.505		2.500	2.500	2.500	2.500	
R	0.312	0.318		.313	.313	.313	.313	
S	0.315	0.322		.315	.315	.315	.315	
T	2.495	2.505		2.500	2.500	2.500	2.500	
U	1.357	1.367		1.362	1.362	1.362	1.362	
V	0.787	0.807		.797	.797	.797	.797	
W	0.540	0.560		.550	.550	.551	.550	
X	1.674	1.684		1.679	1.679	1.679	1.679	
Y	0.256	0.262		.258	.258	.258	.258	
Z	0.912	0.932		.927	.925	.925	.925	
AA	0.490	0.510		.500	.499	.499	.500	
AB	0.178	0.198		.188	.188	.188	.188	
AC								
AD								
AE								
DAS Accept/Reject				✓	✓	✓	✓	

Measured by: 44	Date: 17-03-26
Audited by: 49	Date: 17/03/27
Prototype Approval: 9-89	Date:

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	99.04.19	Incorporated DSI 9095, DSI 9102 & DSI 9122 Rev. A	RF	
C	99.11.10	Added Dim. R-T	RF	
D	02.12.12	Reformat; Added Dim. U-W & DT8683, DT8686	KJ/RF	
E	06.07.05	Revised per drawing revision C	KJ/JLM	
F	07.03.21	Revised per drawing revision D	KJ/JLM	
G	12.03.08	Dimension R and Y revised	KJ	

DART

DESIGN #	DRAWN BY CB	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED PH	APPROVED #	DRAWING NO. D2665	REV. D SHEET 1 OF 1
DATE 06.11.08	TITLE SADDLE FWD OUTSIDE HIGH	SCALE 1:3	
A	97.03.25	NEW ISSUE	
B	97.07.11	ANGLE AND NOTES ADDED	
C	06.05.29	INCORPORATE DEO 9122, 9102, 9095	
D	06.11.08	R0.188 WAS R0.30; $\phi 0.316$ WAS $\phi 0.313$	



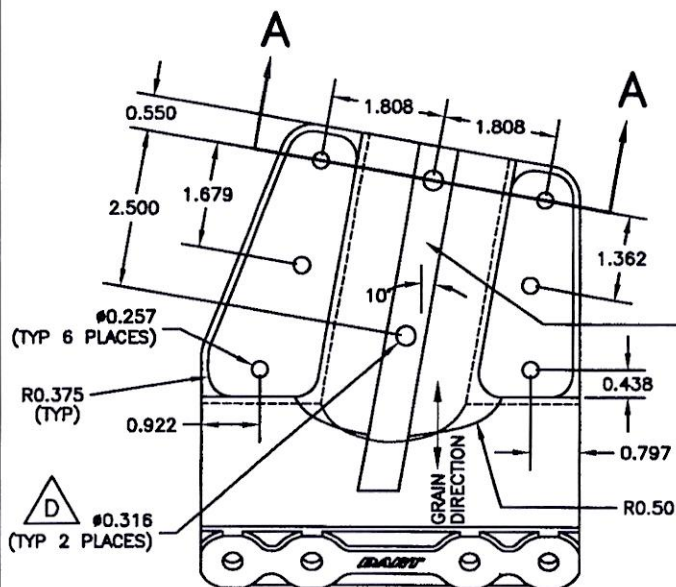
RELEASED

07-02-12

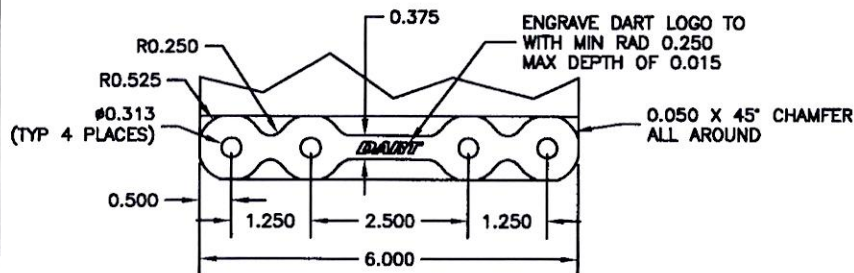
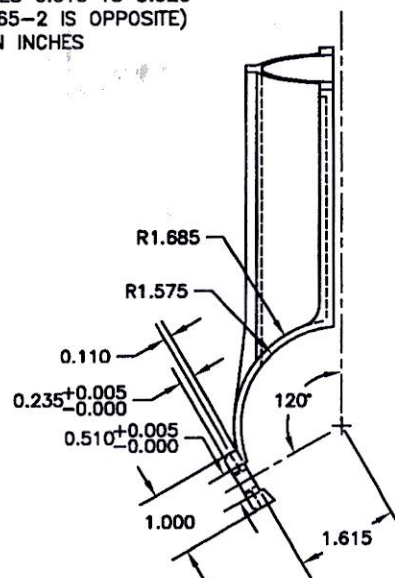
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 158376 HUS
17-03-20

NOTES:

- 1) MATERIAL: ALUMINUM 7075-T7351 (QQ-A-250/12)
(MAKE FROM D6101-003 SADDLE BILLET, 7075)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT GLOSS WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) BREAK ALL SHARP EDGES 0.010 TO 0.020
- 5) D2665-1 SHOWN (D2665-2 IS OPPOSITE)
- 6) ALL DIMENSIONS ARE IN INCHES



ENGRAVE PART
NUMBER AND
BATCH NUMBER
TO MAX DEPTH
OF 0.010 WITH
MIN RADIUS
OF 0.010

**D2665-1 SADDLE FWD OUTSIDE HIGH****Copyright © 1997 by DART AEROSPACE USA, INC.**

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